

ENVIRONMENTAL ASSESSMENT

Proposed Hiking Trail Connection

Highway 70/St. Croix Campground to the North Benson Parking Lot

May 2004



National Park Service

St. Croix National Scenic Riverway

Wisconsin Department of Natural Resources

Governor Knowles State Forest

BURNETT COUNTY

Wisconsin

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1 INTRODUCTION

1.1 Background

The upper St. Croix National Scenic Riverway (Riverway), which is administered by the National Park Service, (NPS) and Governor Knowles State Forest (Forest), which is administered by the Wisconsin Department of Natural Resources (WiDNR), create a publicly-owned area along the St. Croix River in northern Polk and Burnett Counties, Wisconsin. A major reason for the establishment of the Forest was to provide resource protection and recreation in conjunction with the Riverway (WiDNR, 1988). The Riverway is naturally focused on canoeing and boating. On the Forest, emphasis is on land-based activities such as hiking, snowmobiling, and horseback riding.

Both multiple-use trails and foot-traffic only (hiking) trails exist on the Forest. There are two hiking trails, one on the north end of the Forest and one on the south end of the Forest. The north hiking trail, called the Brandt Pines Trail, is 22 miles long and extends from the Sioux-Portage Group Campground near Danbury south to Fox Landing on the St. Croix River. The south hiking trail, called the Benson Brook Trail, is 16 miles long and extends from a trailhead at the end of Evergreen Avenue north of St. Croix Falls (approximately 2 miles north of Sunrise Landing on the St. Croix River) north to the North Benson Parking Lot near Raspberry Landing. There is presently about a 7-mile gap between the two hiking trails. A vicinity map is shown in Figure 1. The locations of the hiking trails and multiple use trails on the Forest are shown in Figure 2. The hiking trails do not connect to the multiple-use trails.

The Master Plan for the Forest envisions a continuous hiking trail the length of the forest. Limiting factors to the development of the continuous trail system include land ownership. Many areas within the Forest boundaries have fragmented ownership. Therefore, the development of a continuous trail system will require agreements with adjacent landowners, both public and private.

1.2 Purpose and Need

The WiDNR would like to construct an additional segment of the Benson Brook Hiking Trail at the Forest that would run from the North Benson Parking Lot near Raspberry Landing on the St. Croix River to their new St. Croix Campground near Highway 70. A North Benson Parking Lot to Highway 70/St. Croix Campground trail connection would bring the Forest closer to their goal of a continuous hiking trail. If the proposed connection is constructed, the hiking trail would be complete from the trail head at Evergreen Avenue, to Lagoo Creek Route, to County Road O, to the North Benson Trail Head, to Highway 70, to the NPS Sandrock Cliffs Trail. This would leave only a 6 mile gap between the Sandrock Cliffs Trail and the Brandt Pines Trail. The WiDNR plans to pursue trail use agreements with private landowners to fill the 6 mile gap and complete the hiking trail. The continuous hiking trail at the Forest may be complete by 2010. In addition to helping to complete the continuous hiking trail, the proposed trail connection would also provide additional recreational opportunities to visitors at the Highway 70/St. Croix Campground who may wish to take short day hikes in the immediate area.

The proposed hiking trail connection would run through NPS-owned land near Raspberry Landing and would require NPS approval. The trail connection would be limited to foot traffic only. The trails to which it would connect are also for foot-traffic only. Small mechanized equipment (All Terrain Vehicles) would be used by the WiDNR for inspections and maintenance.

The general management plan (GMP) for the Riverway sets forth the basic management philosophy for the area. It states that one of the primary purposes of the Riverway is to provide for high quality recreational opportunities that do not detract from its exceptional natural, scenic, cultural, and aesthetic resources and values (NPS, 1998). One of the aspects of the Riverway that makes it special is that visitors have extended opportunities to experience the solitude and beauty inherent in the Riverway's exceptional natural resources.

The proposed trail connection would be within the "Near-Primitive Northwoods" management area described in the GMP. These areas are to be managed to provide a natural landscape that is typified by or reflects the northwoods ecosystem. There may be signs of people, but generally it will look like a natural, remote, primitive area. Most visitors will be on foot, paddling, or engaged in other human-powered outdoor recreational

activities, although some low-speed motorboating will also be permitted. Development will be rare. Small primitive campsites, designated trails, and access points may be present.

The NPS has a history of cooperating with the WiDNR to provide hiking opportunities in the area and has issued special use permits for some of their other trails that run through NPS-owned land. The purpose of this environmental assessment is to determine whether the NPS should approve construction of this trail connection, and should it be approved, what measures should be put into place to avoid and mitigate impacts to Riverway resources. The document looks at the alternatives available for construction and their potential environmental impacts.

1.3 Compliance

The NPS will comply with all applicable regulations, statutes, laws and executive orders in carrying out the planning for the trail connection at the Riverway.

1.3.1 Applicable Impact Topics

National Environmental Policy Act of 1969: This act sets forth a federal policy to preserve important historic, cultural, and natural aspects of our natural heritage. It requires federal agencies to use a systematic, interdisciplinary approach in planning and decision making. This EA was prepared pursuant to the National Environmental Policy Act (NEPA).

Clean Air Act (42 U.S.C. 7401 et seq., as amended): The Clean Air Act of 1963 stipulates that federal land managers have a responsibility to protect a park's air quality from adverse air pollution impacts. Construction of the trail connection would have minor temporary impacts on air quality. Therefore, air quality impacts are analyzed in this EA.

Executive Order 11990 "Protection of Wetlands" (3 CFR 121, Supp. 177): This order requires Federal agencies to provide leadership and take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial value of wetlands. It further requires Federal agencies to avoid undertaking or providing assistance to new construction located in wetlands. Some of the areas adjacent to

the proposed trail connection could be considered wetlands. Therefore, wetland impacts are analyzed in this EA.

Wild and Scenic Rivers Act (Public Law 90-542, as amended): The Riverway was established under the Wild and Scenic Rivers Act (Act) in 1968. The purpose of designation under the Act is to preserve and protect selected rivers along with their immediate environments. Their free-flowing character, water quality and outstandingly remarkable resource values are to be protected.

The Riverway was set aside specifically to protect its outstandingly remarkable scenic, recreational, fish, wildlife and cultural values. The proposed trail connection would not require work below the ordinary high water of the St. Croix National Scenic Riverway and, therefore, would have no effect on its free-flowing character. However, the proposed trail could affect water quality and scenic, recreational, fish, wildlife and cultural values. The effects of the trail connection on these values, are, therefore, considered in this EA under the appropriate impact headings.

Section 7(a) of the Wild and Scenic Rivers Act protects designated rivers from direct and adverse effects of water resources projects. It states that:

"no department of agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration. Nothing in the foregoing sentence, however, shall preclude licensing of, or assistance to, developments below or above a wild, scenic, or recreational river area or on any stream tributary thereto which will not invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area on the date of designation of a river as a component of the national scenic rivers system."

Water resources projects are those require a Section 404 permit from the Corps of Engineers and include dams, bridges, bank stabilization projects, boat ramps, fishing piers and other activities that require work below the ordinary high water mark of a body of water. The proposed trail connection would not require work below the ordinary high water mark. Therefore, while other requirements of the Wild and Scenic Rivers Act apply to this project, Section 7(a) does not.

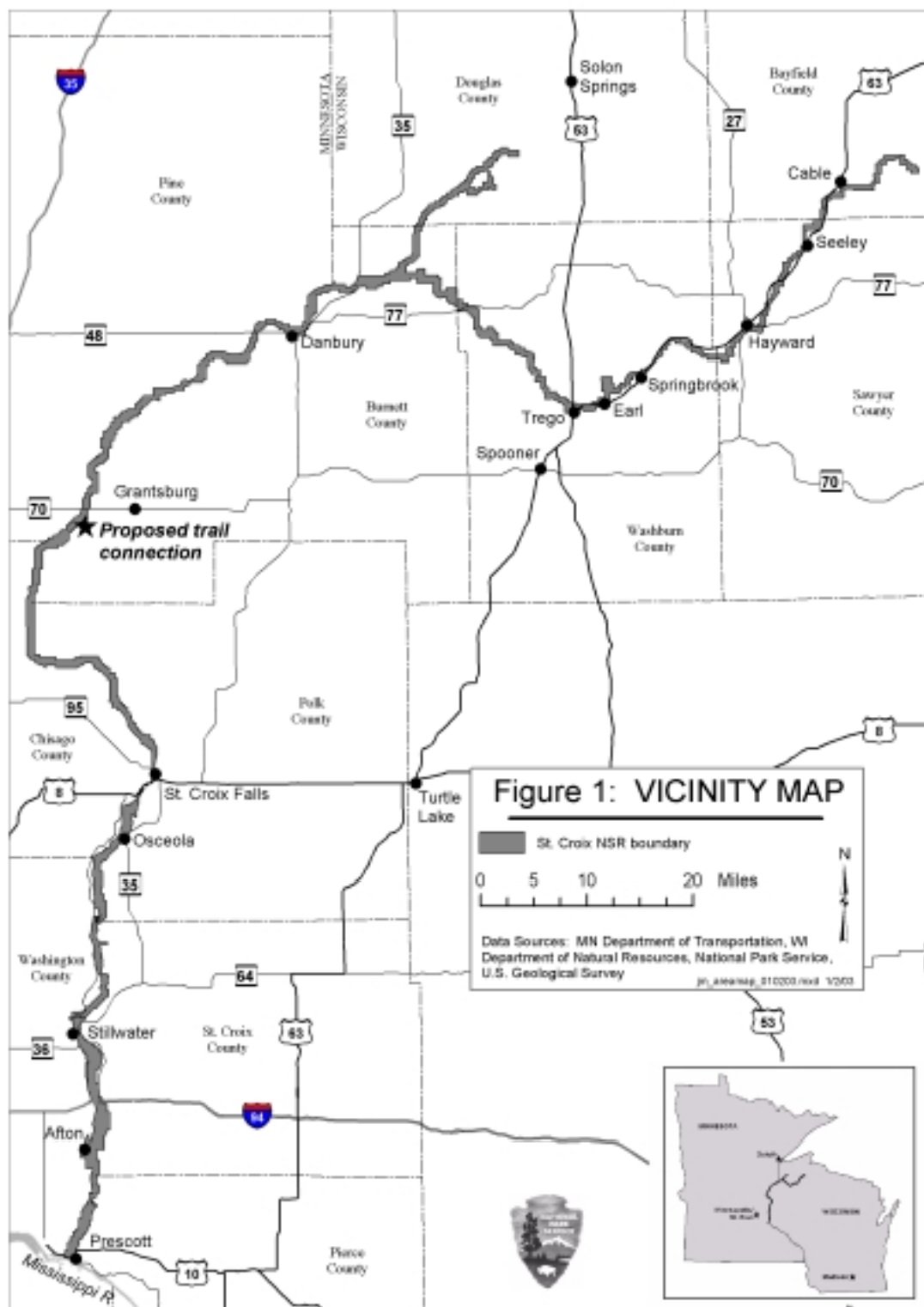
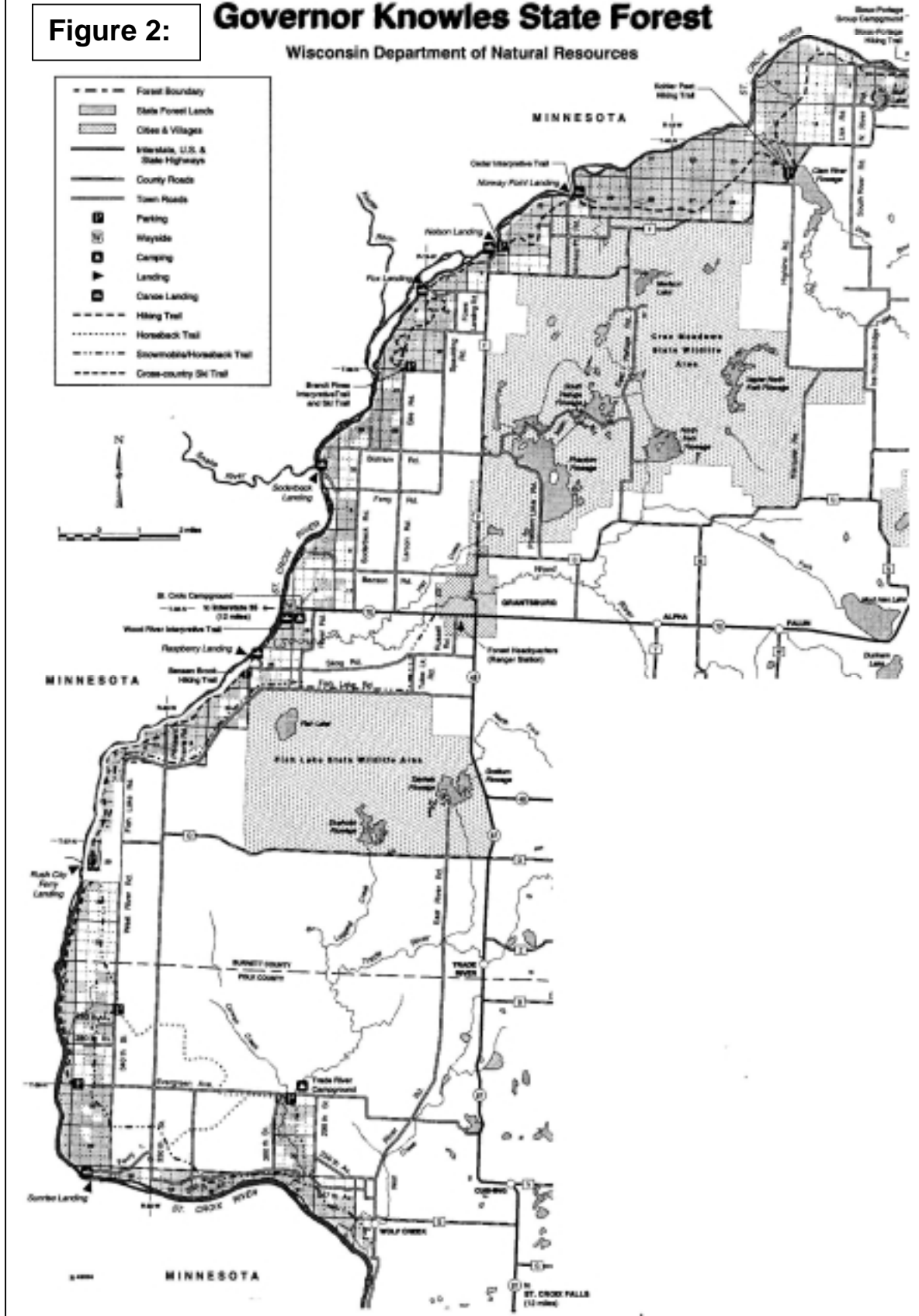


Figure 2:

Governor Knowles State Forest

Wisconsin Department of Natural Resources



Endangered Species Act of 1973, as amended (16 USC 1531 et seq.): The Endangered Species Act requires all federal agencies to consult with the U.S. Fish and Wildlife Service to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. Several Federally listed species occur at the Riverway. Therefore, the impact of the trail connection on these species is analyzed in this EA.

In addition, NPS management policies (2001) also require assessment of impacts to certain state-listed rare, candidate, declining and sensitive species. There are numerous state-listed and special concern species that occur along the Riverway. The impact of the trail connection on these species is also evaluated.

National Historic Preservation Act, as amended in 1992 (16 USC 470 et seq.) and Executive Order 11593: This Act and order require Federal agencies to survey, document, and where feasible, preserve historic properties (i.e.: those that are on or eligible for listing on the National Register of Historic Places (NRHP)). Section 106 of the National Historic Preservation Act requires Federal agencies 1) to survey and assess properties against National Register criteria and, if eligible 2) assess the effect of the proposed undertaking, and 3) if necessary, mitigate adverse effect. The trail connection has the potential to impact historic properties. Therefore, its effect is analyzed in this EA.

Impairment: While Congress has given the NPS management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirements of the NPS Organic Act of 1916 and the NPS General Authorities of 1970 which prohibit the impairment of park resources and values. The NPS organic Act states that the NPS "shall promote and regulate the use of Federal areas known as national parks, monuments, and reservations...by such means and measures as conform to the fundamental purpose of said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them *unimpaired* for the enjoyment of future generations" 16 USC 1). The General Authorities Act of 1970 supplemented these provisions by clarifying that the provisions of the Organic Act apply to all areas included in the National Park System including the Riverway.

Impairment is an impact that, in the professional judgment of the responsible NPS manager would harm the integrity of park resources or values. An impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park; key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or identified as a goal in the park's general management plan or other relevant NPS planning documents.

Impairment must be analyzed in all NPS EA's. Impairment is analyzed for each alternative and each impact topic in this EA.

1.3.2 Nonapplicable Impact Topics

Executive Order 11988, "Floodplain Management" The purpose of this order is to avoid, to the extent possible, the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development. It requires all federal agencies to reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare, and restore and preserve the natural and beneficial values of floodplains. The proposed trail connection would not result in occupancy or modification of floodplains or support floodplain development. Therefore this impact topic is not discussed further.

Prime and Unique Farmland/Farmland Protection Policy Act (7 U.S.C. 4202(b)): This act requires Federal agencies to determine whether a proposed action will affect prime or unique farmlands. Prime farmlands are those whose value derives from their general advantage as cropland due to soil and water conditions; unique farmlands are those whose value is derived from their particular advantage for growing specialty crops. These areas can be cultivated land, pasture, or woodland. Efforts should be made to assure that such farmlands are not irreversibly converted to other uses unless other national interests override the importance of preservation or otherwise outweigh the environmental benefits derived from their protection. No prime or unique agricultural soils are known on along the St. Croix River north of Nevers Dam NPS, 1998). Furthermore, the proposed trail connection would not irreversibly convert any prime or unique farmlands, if they do exist. Therefore this impact topic is not discussed further.

Socioeconomic Environment:

The proposed trail connection is located in Burnett County, Wisconsin. The county is largely rural in character. The Riverway and adjacent public lands provide a popular recreation resource for both residents of the area and visitors. The local tourism industry provides necessary services such as food, lodging, gasoline etc. The tourism industry is seasonal in nature and very much dependent on the weather, even in summer.

The proposed trail connection would not affect any communities overall population, income or employment base. Therefore, this impact topic is not analyzed further in this EA.

2 ALTERNATIVES

2.1 No Action Alternative: No Hiking Trail Connection

Under the no action alternative, no trail connection would be constructed on NPS land within the boundary of the Riverway. The existing condition would remain unchanged by trail construction. Selection of this alternative would mean that the hiking trail would not be continuous from Evergreen Avenue to the Highway 70/St. Croix Campground.

2.2 Alternative 1 (Preferred): Hiking Trail Connection

This alternative would provide a trail connection between the south side of the existing loop trail off the Highway 70/St. Croix Campground to North Benson Parking Lot. The proposed trail connection would be for hiking, snowshoeing, and cross-country skiing only. Non-authorized vehicular traffic would be prohibited.

The hiking trail connection would head south from the loop trail, cross the Wood River, and continue south along a level area at the toe of an escarpment. Near Raspberry Landing, the trail connection would use a former driveway that served a recently removed cabin. The trail would cross the access road to Raspberry Landing and then follow a former power line right-of-way to the toe of the escarpment that rises approximately 100 feet up to the North Benson Parking Lot. The trail would go up the escarpment using switchbacks where necessary and following the gentlest grade possible. About 30 feet of steps would be put in on the steepest trail sections. Filter cloth, water bars

and proper grading would be used to avoid erosion. The proposed trail would connect to the Benson Brook Hiking Trail at the North Benson Parking Lot on the top of the escarpment.

The overall length of the trail connection is approximately 1 mile. The bridge and the switch-back trail portion would both be on Forest property. The remainder of the trail would be on Riverway property. The project area and landownership are shown in Figure 3. Topography in the project area is shown in Figure 4.

The bridge would be a manufactured bridge approximately 6-feet wide and 60-feet long. It would be a single span with no structures placed in the Wood River. The bridge abutments would be placed on the top of the upper bank so as not to be affected by spring floodwaters and prevent washing out of the bridge. Sediment cloth, fabric filters, and sediment traps would be used as necessary to prevent any soil or sediment from reaching the Wood River. At normal water stage in the Wood River the clearance would be about 10-12 feet above the water, allowing navigation without obstruction. The WiDNR may work with the National Guard to bring in the bridge by helicopter. The Wood River crossing location is shown in Figure 5.

The trail would be constructed by cutting and brushing out vegetation and minimal grading of the existing ground surface. Boardwalks would be placed as needed to protect the numerous seeps along the length of the trail connection (Figure 6). The finished trail tread would be 6 feet wide with an additional maintenance buffer of 2 feet along each side of the finished tread. Total width would be 8 feet. These trail dimensions are compatible with other trail widths in the area. Construction would take place in August, September and October. The proposed width would accommodate construction and maintenance equipment such as Gators (a John Deere utility machine with 6 wheels and low ground pressure), lawnmowers, and All Terrain Vehicles with trailers. The Gator would help minimize impacts to soils.

The WiDNR would be responsible for maintaining the trail, even that portion that would be located on NPS property. Mowing would be done once a year along the wooded portions of the trail and twice a year in brushier areas.

Mitigation Measures:

On site supervision by WiDNR and the NPS would avoid adverse effects during construction. Wisconsin Forestry Best Management

Practices would be applied to minimize impacts to soils. In addition, in wet or runoff areas, boardwalks would be used to minimize impacts and allow for natural drainage. Where necessary, cut and fill would be used to fill depressions and provide a level tread. Mineral soil may be brought in to fill places where rocks need to be removed. The old culverts in the former cabin access road would be replaced with wood box culverts to allow for water flow out of the seepages in the escarpment.

Impacts to archeological resources that may be on site would be avoided by having a para-archeologist on site during trail construction. The trail connection would be rerouted if archeological resources are discovered.

Impacts to state-listed plant species would be avoided by surveying the flagged route prior to construction. The trail would be realigned to avoid impacts to any rare plants.

Active Law Enforcement, barricades, or small gates would be used to deter non-authorized use along the hiking trail.

2.3 Alternatives Considered, But Not Analyzed Further

A trail connection that would climb the escarpment after crossing the Wood River and then head back down the escarpment to connect with the former cabin driveway was considered in an attempt to avoid the numerous seeps at the toe of the escarpment. However, to reach a level tread surface it would have to be routed along the top of the escarpment on private land within the Riverway boundary. The scenic easement on this property does not grant the public any right to enter on or use the land for any purpose. In addition, the steepness of the slope and the many large rocks along it would make a trail connection here difficult to maintain. The private landowner is not interested in a public hiking trail crossing his property. For these reasons, this alternative was not pursued further. A narrower tread width was also considered but rejected due to the labor intensive effort that would be required to maintain it with hand tools.

2.4 Environmentally Preferred Alternative

The environmentally preferred alternative is the alternative that causes the least damage to the biological and physical

environment. It also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources. The No Action Alternative is the environmentally preferred alternative.

Figure 3: Proposed Hiking Trail Connection
St. Croix Campground to North Benson Parking Lot

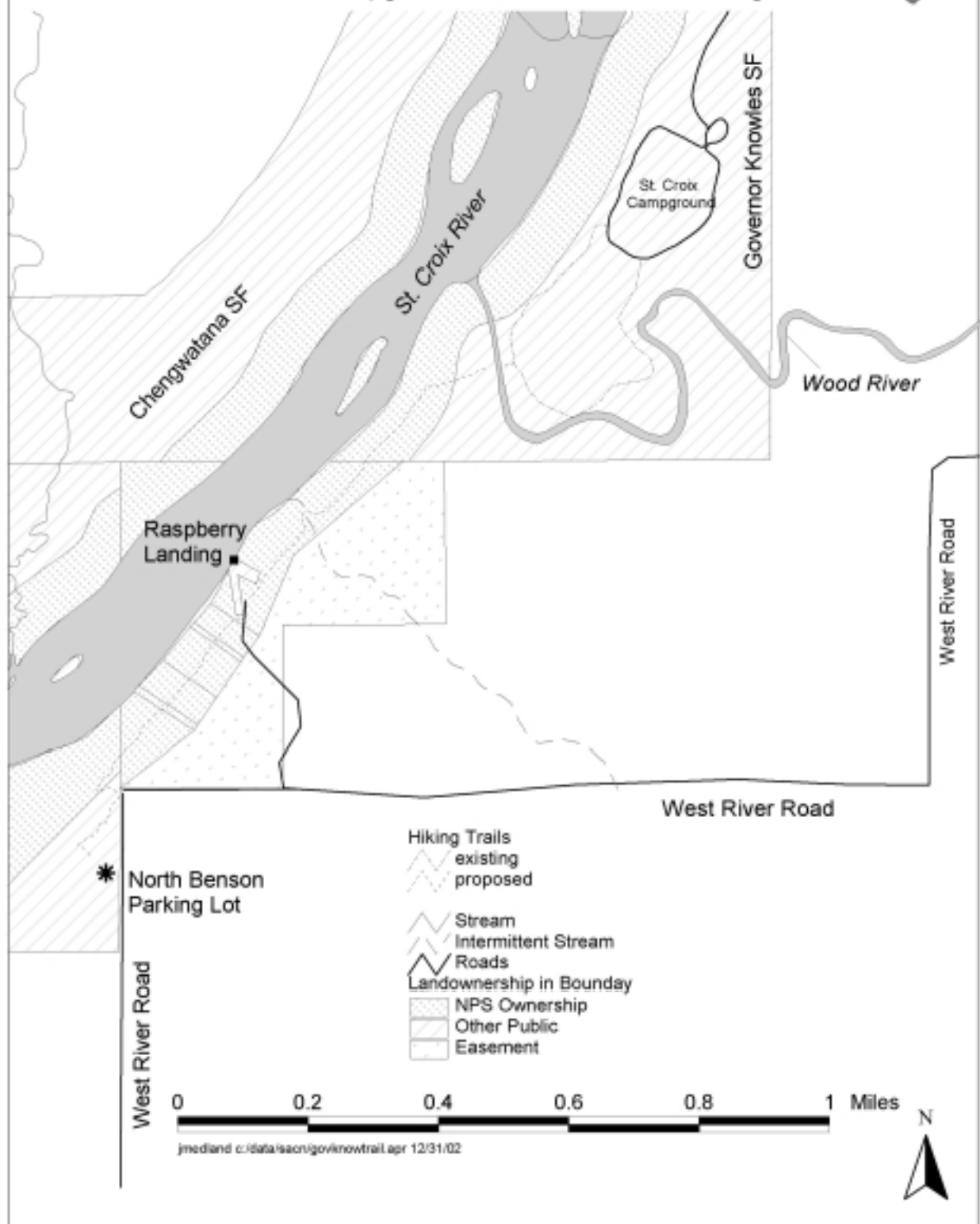


Figure 4: Proposed Hiking Trail Connection
Project Area Topography



Figure 5: Proposed Crossing Location on Wood River



Figure 6: Seep on Proposed Route of Trail Connection



2.5 Table 1: Summary of Environmental Consequences

Impact Topic	No Action: No Trail Connection	Alternative 1: Trail Connection
Air Quality	No impact.	Short-term minor impacts during construction and maintenance. Impacts limited to emissions from internal combustion engines.
Soils	No impact.	Minor impact related to compaction caused by construction and maintenance equipment and slight increase in soil erosion.
Water Quality	No impact.	Minor impacts related to minor increase in soil erosion.
Floodplains	No impact	No impact. No occupancy or modification of floodplains.
Wetlands	No impact.	Negligible impact. Limited to slight disturbance if equipment is operated along wetland edges.
Vegetation	No impact.	Minor impact limited to tree and brush clearing and mowing to construct trail.
Wildlife	No impact.	Minor impact from disturbance during construction and use of trail.
Threatened, Endangered and Rare Species	No impact.	Negligible impact from trail construction and use.
Prehistoric Resources	No impact.	Negligible impact. Impacts avoided by conducting archeological survey during trail construction and rerouting to avoid any resources discovered.
Ethnography	No impact	No known impact (pending Tribal consultation).
Historic Resources	No impact	Negligible impact.
Cultural Landscapes	No impact	No impact.
Scenic Resources	No impact	Minor impact from introduction of human-made elements.
Natural Soundscapes	No impact	Minor impact from short-term noise during trail construction and maintenance.
Recreation/ Visitor Use	No impact	Minor impact from minor impact to scenery and soundscapes. Positive impact by providing a new recreation activity that does not conflict with existing.

3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter examines the potential environmental consequences of the three alternatives under consideration. Direct, indirect and cumulative impacts are considered. Direct impacts are those potentially caused by the action (construction and use of the trail connection) that would occur at the same time and place as the action. Indirect impacts are those caused by the action that would occur later in time and/or would be farther removed in distance but are still reasonably foreseeable. Cumulative impacts are impacts on specific resources that result from the incremental impact of that action when added to other past, present and reasonably foreseeable future actions regardless of what agency or person undertakes the other actions. The analysis provides a basis for comparing the advantages and disadvantages of each alternative. Impact thresholds are defined and impacts are identified as:

- **Short-term** -- lasting only during the construction period or no longer than 2 years
- **Long-term** -- essentially a permanent post-construction impact.

3.1 Climate

Affected Environment: The climate of the area is sub-humid continental. Weather is characterized by warm, humid summers and cold winters. Average daily maximum temperatures can vary from 71° F to 85° F in July and 11° F to 23° F in January. The spring months are generally cool and rainy, with June usually being the wettest month of the year. During the summer and early fall, the weather usually becomes progressively drier. Total annual precipitation is approximately 29 inches. Snowfall contributes about 15% of the total annual precipitation (NPS, 1998 and 2000a).

Consequences: The proposed trail connection would not impact the climate of the area. It is described simply to provide context for the reader.

3.2 Air Quality

Affected Environment: The Clean Air Act, as amended (42 U.S.C. 7401 et seq.) established a program to preserve, protect, and

enhance the air quality in clean air areas of the United States. The Riverway was designated as a Class II clean air area. Under this designation, limited development can be permitted in the vicinity as long as the levels of particulate matter, sulfur dioxide, and nitrogen dioxide do not exceed the Class II increments.

Impact Thresholds:

Negligible - No perceptible visibility impacts and no smell of exhaust.

Minor - Visibility impacts and the smell of exhaust are perceptible, but are very short-term (lasting 1-day or less).

Moderate - Visibility impacts and the smell of exhaust are perceptible but limited in duration, extent and magnitude.

Major - Visibility impacts and the smell of exhaust would be perceptible and long-term.

Consequences:

No Action: No Hiking Trail Connection

Under this alternative there would be no trail connection constructed. There would be no impact to air quality.

Alternative 1: Proposed Hiking Trail Connection

Under this alternative, there would be short-term, minor impacts to air quality. Impacts would be limited to the operation of internal combustion engines during construction and maintenance (mowing) of the trail.

Cumulative Impacts: Cumulative impacts to air quality come from the operation of internal combustion engines within and adjacent to the Riverway. However, the additive effect of construction and maintenance of the hiking trail would be minimal.

Impairment: The proposed trail connection would not result in impairment to air quality.

3.3 Soils

Description: The soil in the project area consists of silts in the lowland area and sandy loam on the escarpment.

Impact Thresholds:

Negligible - No change in drainage capacity or moisture absorbency of existing soils, no erosion potential during or after construction.

Minor - Very limited soil disturbance (under 5 acres) having some possible short-term and localized effects related to increased erosion potential but no long-term changes in soil drainage capacity or moisture absorbency.

Moderate - Disturbance of 5 acres or more of soil requiring an erosion control plan with mitigation, measurable long-term changes in soil drainage and moisture absorbency characteristics.

Major - Disturbance of 5 acres or more of soil requiring an erosion control plan with mitigation, measurable long-term changes in soil drainage and moisture absorbency characteristics

Consequences:

No Action: No Hiking Trail Connection
No impact.

Alternative 1: Proposed Hiking Trail Connection
The hiking trail connection would result in minor impacts to soils. Operation of construction and maintenance equipment would result in minor soil compaction. The trail, particularly up the escarpment, would also result in minor increases in soil erosion. Impacts would be minimized by using the measures described in Section 2.2.

Cumulative Impacts: Soils at the Riverway are impacted by recreational use (vegetation trampling, compaction and subsequent erosion) and sometimes by construction activities in or adjacent to the Riverway. The additive effect of construction, use and maintenance of the proposed hiking trail would be minimal.

Impairment: The proposed trail connection would not result in impairment to soils at the Riverway.

3.4 Water Quality

Description: The St. Croix River has good water quality. Dissolved oxygen is generally high, above 5 milligrams per liter. The water has a moderate brown color caused principally by organic acids and fine organic detritus drained from the thousands of acres of marshes and peat bogs in the basin. Water transparency, as measured by Secchi disc readings, may vary from 2 to 4 feet depending on the time since last runoff (NPS, 1998). To help protect its water quality, the Riverway has been designated by Wisconsin as an "outstanding resource water" and by Minnesota as an "outstanding resource value waters - restricted." The Wisconsin classification means that a proposed new discharge or an increased discharge from a municipal or industrial source would not be permitted unless the effluent meets the background level in the river. Minnesota's classification means that a proposed new or increased discharge would not be allowed unless there was no prudent or feasible alternative.

Impact Thresholds:

Negligible - Neither surface water quality nor hydrology would be changed from current conditions.

Minor - Changes in surface water quality or hydrology would be measurable, but changes would be small, short-term and effects localized.

Moderate - changes in surface water quality and/or hydrology would be long-term but localized.

Major - Changes in surface water quality and/or hydrology would be measurable, long-term and not confined to the project area.

Consequences:

No action: No Hiking Trail Connection
No impact.

Alternative 1: Proposed Hiking Trail Connection
There would be minor impact to water quality from increased potential for soil erosion. Impacts to hydrology would be avoided by spanning the seeps in the area with boardwalks.

Cumulative Impacts: Sources of water pollution include non-point sources outside the Riverway such as runoff from lands developed for agriculture, forestry, roads, residential areas, or industrial areas. Sediments carried into the Riverway from tributaries during heavy runoff events can cause turbidity. The additive effect of construction, use and maintenance of the hiking trail connection on water quality would be negligible.

Impairment: The proposed trail connection would not result in impairment to water quality.

3.5 Wetlands

Description: Much of the land within the Riverway boundary is covered by various types of wetlands, including swamps, marshes, bogs, fens, wet meadows, ponds, sloughs and seeps. There are no mapped wetlands in the immediate project area. However, there are some intermittent streams and small isolated seeps.

Impact Thresholds:

Negligible - Wetlands would be neither directly impacted by fill nor indirectly impacted by changes in drainage patterns.

Minor - Wetland fill would be 0.1 acre or less and/or there would be indirect impacts to wetlands from changes in drainage patterns.

Moderate - Wetland fill would be 0.1 - 0.5 acres and or there would be indirect impacts to high-quality wetlands from changes in drainage patterns.

Major - Any fill of high-quality wetlands or fill exceeding 0.5 acres of other wetlands and/or indirect impacts on wetlands of high quality from changes in drainage patterns.

Consequences:

No action: No Hiking Trail Connection

The no action alternative would have no impact on wetlands.

Alternative 1: Proposed Hiking Trail Connection

The proposed hiking trail would have a negligible impact on wetlands. The final routing of the trail would avoid wet areas. Where these areas could not be avoided, they would

be bridged or traversed by boardwalks. Slight disturbance could occur from equipment along wetland edges.

Cumulative Impacts: Wetlands along the Riverway are in good condition and well protected. Impacts are limited to some disturbance during construction activities that take place within the Riverway boundary. No wetlands would be directly or indirectly impacted by this proposal. Therefore, this proposal would have no additive effect to wetlands.

Impairment: The proposed trail connection would not result in impairment to wetlands.

3.5 Vegetation

Description:

The vegetation along the Riverway includes aspects of both the Northern Hardwoods Province and the Prairie-Forest Province. The transition zone runs generally through the St. Croix Falls area, with northern hardwoods occurring to the north of this line (Curtis, 1971). Plant communities include northern and southern dry forest, northern and southern mesic forest and northern and southern wet forest. The distribution of these communities is governed by a variety of site conditions including soil type, landform, aspect, slope, and moisture.

In the project area, the plant community consists of bottomland hardwoods and mesic forest. Trees include maple, aspen, jack pine, basswood, and oak.

Impact Thresholds:

Negligible - No native terrestrial or aquatic plant communities would be disturbed. No indirect impacts on native vegetation.

Minor - Disturbance of native terrestrial and/or aquatic plant communities would be limited to less than 1 acre. Indirect impacts would be localized.

Moderate - Disturbance of native terrestrial and/or aquatic plant communities would be from 1-5 acres. Indirect impacts could spread outside the project area.

Major - Disturbance of more than 5 acres or more of native terrestrial and/or aquatic plant communities would occur. Indirect impacts could be widespread.

No Action: No Hiking Trail Connection

The no action alternative would have no impact to vegetation.

Alternative 1: Proposed Hiking Trail Connection

Construction of the hiking trail connection would result in the clearing of some trees and brush to make way for the trail. The result would be a minor impact to vegetation in the project area.

Cumulative Impacts: Vegetation along the Riverway is impacted by recreational use (vegetation trampling, compaction and subsequent erosion) and sometimes by construction activities in or adjacent to the Riverway. The additive effect of the construction, use, and maintenance of the proposed hiking trail on Riverway vegetation would be minor.

Impairment: The proposed trail connection would not result in impairment to vegetation.

3.6 Wildlife

Description: The variety of upland, lowland, and aquatic habitats found along the Riverway supports a highly diverse and abundant wildlife population. More than 430 species of animals have been recorded. These include insects, mussels, fish, amphibians, reptiles, birds, and mammals.

Impact Thresholds:

Negligible - No native terrestrial or aquatic wildlife would be disturbed. There would be no indirect impacts on native wildlife.

Minor - Disturbance of native terrestrial and/or aquatic wildlife habitat would be limited to less than 1 acre. Indirect impacts would be localized.

Moderate - Disturbance of native terrestrial and/or aquatic wildlife habitat would be from 1-5 acres. Indirect impacts could spread outside the project area.

Major - Disturbance of more than 5 acres or more of native terrestrial and/or aquatic wildlife habitat would occur. Indirect impacts could be widespread.

Consequences:

No action: No Hiking Trail Connection

The no action alternative would have no impact on wildlife.

Alternative 1: Proposed Hiking Trail Connection

The proposed hiking trail would have a minor impact on wildlife. Wildlife may be temporarily displaced during trail construction activities. Less than 1 acre of habitat would be lost. Use of the trail would also result in additional minor disturbance of wildlife.

Cumulative Impacts: Wildlife along the Riverway is well protected. The impacts that do occur arise from disturbance related to recreation use and human activity in adjacent areas. The additive effect of the proposed trail connection would be minor.

Impairment: The proposed trail connection would not result in impairment to wildlife at the Riverway.

3.7 Threatened and Endangered Species

Description: The Riverway serves as a refuge for a number of species that are threatened, endangered or of special concern. Federally-listed endangered species that occur in the Riverway include the Higgins' eye pearly mussel and the winged mapleleaf mussel. Federally listed threatened species that occur along the Riverway include the gray wolf and bald eagle. Other Federally listed species that could occur along the Riverway because their habitat is present include the Canada lynx, Kirtland's warbler, and Karner blue butterfly.

Much of the area surrounding the upper Riverway is potential wolf habitat. While the Riverway alone is too narrow to fully support a wolf pack, there are a number of packs in the vicinity of the Riverway. The Riverway serves as an important travel corridor for wolves and provides hunting opportunities. The junction of the Namekagon and St. Croix Rivers appears to serve as an important staging area for dispersing wolves (NPS, 1998).

The Riverway provides important bald eagle habitat, both for breeding and wintering. Bald eagles are commonly seen along the Riverway in the project area. Nesting bald eagles are associated almost exclusively with lakes, rivers or seacoasts. Fish are the major item of their diet. Adults tend to use the same breeding area, and often the same nest, each year. The nests are primarily in large trees, usually within 0.25 miles of shorelines of fish-bearing streams or lakes. Along the Riverway many of the nest trees are large white pines. Essential habitat have 1) space for individual and population growth and normal behavior; 2) food, water, air, light, minerals or other nutritional or physiological requirements; 3) cover or shelter; 4) sites for breeding, reproduction, rearing of offspring; and 5) protection from disturbance. An abundant, readily available food supply, in conjunction with one or more suitable night roost sites, is the primary characteristic of good winter habitat.

Although Canada Lynx has never been documented as occurring at the Riverway, the upper reaches do provide potential habitat. Lynx occur in mesic coniferous forests that have cold snowy winters and provide snowshoe hare prey (USDA, Forest Service, 2000).

Likewise, Karner blue butterflies have never been documented along the Riverway. However, potential habitat does exist. The pine barrens along the Riverway support lupine which is the butterfly's host species.

The endangered Kirtland's warbler was observed once several years ago outside the Riverway boundary. It was in the vicinity of the upper reaches of the St. Croix River, above the Namekagon confluence about 2 miles outside the Riverway boundary. None have been seen since then. The jack pine forests along the Riverway, although much more scarce than they once were, provide potential habitat for Kirtland's warblers.

Species of Concern

The USFWS also maintains a list of species of concern. Further information is needed on these species to determine if it is appropriate to consider them for addition to the Federal list. There are 6 plant and 15 animal species of concern that are known to occur along the Riverway. These species are indicated in the table in the Appendix.

The Minnesota and Wisconsin Departments of Natural Resources also maintain lists of species that are threatened, endangered or of special concern in their states. These State-listed rare species are also shown in the Appendix.

Impact Thresholds:

Negligible - No federally- or state-listed species or their habitat would be affected.

Minor - Individuals or populations of federally- or state-listed species or their habitat would be affected, but the change would be short-term and small in magnitude.

Moderate - An individual or population of a federally- or state-listed species or their habitat would be noticeably affected. The effect could carry some long-term consequence to the individual, population, or habitat.

Major - A population of a federally- or state-listed species or their habitat would be negatively impacted with long-term consequences to the population or habitat.

Consequences:

No action: No Hiking Trail Connection

The no action alternative would have no impact on threatened and endangered species.

Alternative 1: Proposed Hiking Trail Connection

The proposed hiking trail would have a negligible impact on threatened and endangered species.

There are no wolf packs in the project area. However, individual wolves have been documented as occurring as far south as Sunrise Landing, approximately 19 miles downstream of the project area, so it is possible that individual wolves travel through the project area. Use on the trail would be hiking only and is expected to be light and seasonal in nature. Therefore, the proposed trail would have no or negligible impacts to the gray wolf.

The Riverway has developed management guidelines for the protection of bald eagles. The Riverway guidelines are based on the Northern States Bald Eagle Recovery Plan (USFWS, 1983). The guidelines designate buffer zones around bald eagle nests to prevent human disturbance. The

applicable buffer zone is dependent on the type of activity and the season of the year. The maximum buffer is up to 0.5 mile out from the nest. The nearest bald eagle nest is approximately 1.5 miles downstream of the project area. Therefore, construction and use of the proposed trail connection would not impact nesting bald eagles. Bald eagles do use the project area for hunting. However, the expected light and seasonal use of the trail would not impact the eagles. Suitable nesting trees may exist along the proposed route. In the unlikely event that an eagle nest is constructed prior to trail construction, the Riverway management guidelines for the protection of bald eagles would be applied. The proposed trial connection would have negligible impacts on the bald eagle.

The project area does not provide habitat for the Canada lynx, Karner blue butterfly, or Kirtland's warbler. Therefore, the proposed trail would have no or negligible impacts to these listed species.

The proposed trail connection carries some potential to impact state-listed plants. Therefore, once the proposed route is flagged, the NPS would conduct a rare plant survey. If any rare plants are discovered along the route, the trail would be rerouted to avoid impacts.

Cumulative Impacts: Impacts to threatened and endangered species along the Riverway arise primarily from habitat degradation that has its origins outside the boundary (sedimentation, water quality degradation, and subsequent effect on mussels). The proposed trail connection would have no additive effect.

Impairment: The proposed trail connection would not result in impairment to threatened and endangered species at the Riverway.

3.8 Prehistoric Resources

Description: Archeological resources reflect the use and occupation of the St. Croix Valley for thousands of years. The Riverway was used as a transportation corridor and food source, with occupation sites along its shores since the retreat of the glaciers. Resources were also extracted from the area to support the Native people's lifestyle (primarily Dakota and Ojibwe), including the raw materials for tools and pottery.

Burial mounds and graves have been identified on bluffs and shorelines along the Riverway.

Impact Thresholds:

Negligible - The impact on prehistoric resources would be barely perceptible and not measurable. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Minor - The impact on prehistoric resources would be perceptible and measurable but highly localized and slight. The impact would not affect the character defining features of a NRHP-eligible or listed site and would not have a permanent effect on the integrity of any sites. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Moderate - The impact on prehistoric resources would be perceptible and measurable. The impact changes one or more character-defining features, but does not diminish the integrity of the resource to the extent that its NRHP-eligibility is jeopardized. For purposes of Section 106, the determination of effect would be *adverse effect*.

Major - The impact on prehistoric resources would be substantial, noticeable, and permanent. For NRHP-eligible sites, the impact changes one or more one or more character-defining features, diminishing the integrity of the resource to the extent that it is no longer eligible for listing in the NRHP. For purposes of Section 106, the determination of effect would be *adverse effect*.

Consequences:

No action: No Hiking Trail Connection

The no action alternative would have no impact on prehistoric resources.

Alternative 1: Proposed Hiking Trail Connection

The proposed trail connection carries the potential to impact prehistoric resources. To avoid impacts, a para-archeologist would be onsite during trail construction. If prehistoric resources are discovered, the trail would be rerouted to avoid impacts. Therefore, impacts to prehistoric resources would be negligible.

Cumulative Impacts: Prehistoric resources at the Riverway have been impacted by eroding shorelines along the river and human activities including farming, building of homes and roads, and recreational activities. Recreation use has compacted soil and worn off the topsoil layer leading to erosion at some sites. Since the trail would be rerouted if any archeological resources are discovered, the proposed trail connection would not have a significant additive effect on prehistoric resources.

Impairment: The proposed trail connection would not result in impairment to prehistoric resources at the Riverway.

3.9 Ethnography

Description: Ethnographic resources can encompass any of the numerous cultural or natural resources of the Riverway. Among the more common types of ethnographic resources are sacred and traditional use sites, traditional properties, ceremonial sites and areas, and sites and features from prehistoric and historic periods. Other cultural resources, including buildings, structures, and archeological sites, may also constitute ethnographic resources. Natural resources such as vegetation, wetlands, wildlife, waterways, and landscapes may also qualify as ethnographic resources.

The determination of status as an ethnographic resource is made through research and consultation with affected groups.

Impact Thresholds:

Negligible - There would be no measurable or perceptible impact to ethnographic resources.

Minor - The impact on ethnographic resources would be perceptible and measurable but highly localized and slight. The impact would not affect unique ethnographic resources.

Moderate - The impact on ethnographic resources would be perceptible and measurable. The impact would result in a noticeable change in the availability, accessibility, or integrity of unique ethnographic resources.

Major - The impact on ethnographic resources would be substantial, noticeable, and permanent. The impact would change the availability, accessibility, or integrity of a

unique ethnographic resource to the extent that it is no longer usable.

Consequences:

No action: No Hiking Trail Connection

The no action alternative would have no impact on ethnographic resources.

Alternative 1: Proposed Hiking Trail Connection

It is unknown whether the proposed hiking trail connection would impact ethnographic resources. The internal review draft of this EA was sent to the St. Croix Band of Lake Superior Chippewa Indians on October 23, 2003. No response has been received. This EA will also be sent to potentially affected Tribes as part of ongoing Tribal consultation to determine if any resources of concern would be impacted.

Cumulative Impacts: The affected Tribes must determine impacts to ethnographic resources. It is unclear whether impacts are already occurring to ethnographic sites and what, if any, additive impact the proposed trail connection may have. A determination will be made in consultation with the Tribes.

Impairment: Further consultation with the Tribes will clarify whether impacts or impairment to ethnographic resources would occur.

3.10 Historic Resources

Description: Historic resources include structures and archeological sites. No historic structures exist in the project area. The remains of a Log Slide from the early days of the logging area do occur on Forest Property in the project area. According to the WiDNR (letter of August 26, 2003), the proposed trail would not have an adverse affect on the Log Slide. The remains of a well from a former home site exist in the project area on Federal land. The well also would not be impacted by the trail.

Impact Thresholds:

Negligible - The impact on historic resources would be barely perceptible and not measurable. For purposes of

Section 106, the determination of effect would be *no adverse effect*.

Minor - The impact on historic resources would be perceptible and measurable but highly localized and slight. The impact would not affect the character defining features of a NRHP-eligible or listed site and would not have a permanent effect on the integrity of any sites. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Moderate - The impact on historic resources would be perceptible and measurable. The impact changes one or more character-defining features, but does not diminish the integrity of the resource to the extent that its NRHP-eligibility is jeopardized. For purposes of Section 106, the determination of effect would be *adverse effect*.

Major - The impact on historic resources would be substantial, noticeable, and permanent. For NRHP-eligible sites, the impact changes one or more one or more character-defining features, diminishing the integrity of the resource to the extent that it is no longer eligible for listing in the NRHP. For purposes of Section 106, the determination of effect would be *adverse effect*.

Consequences:

No action: No Hiking Trail Connection

The no action alternative would have no impact on historic resources.

Alternative 1: Proposed Hiking Trail Connection

It is not known whether the remains of the well are considered historic. However, the well would not be disturbed by trail construction. The proposed trail connection carries the potential to impact historic archeological resources. To avoid these impacts, a para-archeologist would be onsite during trail construction. If historic archeological resources are discovered, the trail would be rerouted to avoid impacts. Therefore, impacts to historic resources would be negligible. A "Request for SHPO Comment and Consultation on a Federal Undertaking" was sent to the Wisconsin State Historic Preservation Office (SHPO) on November 4, 2003 with an NPS finding that no historic properties would be affected. The SHPO concurred with this finding on November 14, 2003.

Cumulative Impacts: Historic resources at the Riverway are impacted by vandalism, weathering, and natural and human induced erosion. Since the trail would not impact historic structures and would be rerouted if any archeological resources are discovered, the proposed trail connection would not have a significant additive effect on historic resources.

Impairment: The proposed trail connection would not result in impairment to historic resources at the Riverway.

3.11 Cultural Landscapes

Description: The Riverway and surrounding area exhibit the effect of human habitation including associated landscapes. Landscapes include a mix of vegetation and open space. The location and species of plants may be significant. All cultural landscapes require management to be maintained. Depending on the landscape, treatment methods to maintain it may be quite different.

Some settings within the Riverway may be determined to be important illustrations of the cultural activities in the area. The NPS is required to identify and protect significant historic or cultural landscapes under its jurisdiction. At this time none have been identified as having the integrity needed to make them eligible for listing on the National Register of Historic Places. Nonetheless, some landscapes may be important for their interpretive value and the NPS may choose to maintain them for this purpose.

Impact Thresholds:

Negligible - The impact on cultural landscapes would be barely perceptible and not measurable. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Minor - The impact on cultural landscapes would be perceptible and measurable but highly localized and slight. The impact would not affect the character defining features of a NRHP-eligible or listed site and would not have a permanent effect on the integrity of any sites. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Moderate - The impact on cultural landscapes would be perceptible and measurable. The impact changes one or more character-defining features, but does not diminish the integrity of the resource to the extent that its NRHP-eligibility is jeopardized. For purposes of Section 106, the determination of effect would be *adverse effect*.

Major - The impact on cultural landscapes would be substantial, noticeable, and permanent. For NRHP-eligible sites, the impact changes one or more one or more character-defining features, diminishing the integrity of the resource to the extent that it is no longer eligible for listing in the NRHP. For purposes of Section 106, the determination of effect would be *adverse effect*.

Consequences

No action: No Hiking Trail Connection

The no action alternative would have no impact on cultural landscapes.

Alternative 1: Proposed Hiking Trail Connection

Since no study of cultural landscapes has been conducted at the Riverway, none have been identified. However, it is unlikely that hiking trail construction would have an adverse effect even if the project area could be considered a cultural landscape.

Cumulative Impacts: Cultural landscapes at the Riverway may be impacted by encroachment of woody vegetation and exotic species, human modification, and neglect. As no cultural landscapes are currently identified within the Riverway, nothing is being done to maintain any landscape features. Therefore, we can only speculate at cumulative impacts. However, the proposed trail connection would have minor impacts on the existing landscape and would not be expected to have a significant additive effect to cultural landscapes that may exist in the area.

Impairment: None of the alternatives would result in impairment to cultural landscapes at the Riverway.

3.12 Scenic Resources

Description: The St. Croix National Scenic Riverway was established under the Wild and Scenic Rivers Act to protect and enhance its outstanding scenic and other resource values. The

Riverway has a natural appearance for much of its length, with exceptions where towns and villages occur along its banks. It passes through various landscapes - ranging from a narrow, meandering, and densely forested stream to areas that provide expansive views of a wide river valley. The overall scenery includes an abundance of wildlife including turtles, songbirds, herons, bald eagles and the occasional otter. The scenery in the immediate area is of a wooded riparian corridor. Raspberry Landing, the access road to the landing, an old road bed, a former power line corridor, and an old well are the only manmade elements of the landscape.

Impact Thresholds:

Negligible. The scenery in the affected area and vicinity of the trail connection would remain essentially unchanged relative to existing conditions.

Minor. The scenery in the affected area and vicinity of the crossing would show a minor deterioration relative to existing conditions.

Moderate. The scenery in the affected area and vicinity of the crossing would show moderate deterioration relative to existing conditions.

Major. The scenery in the affected area and vicinity of the crossing would show a major deterioration relative to existing conditions.

Consequences:

No action: No Hiking Trail Connection

The no action alternative would have no impact on the scenic resources of the Riverway.

Alternative 1: Proposed Hiking Trail Connection

Alternative 1 would result in the construction of a foot trail and a bridge where none presently exists. This would introduce new human-made elements to the existing natural scene. This would be considered a minor negative impact to scenic resources.

Cumulative Impacts: Cumulative impacts on scenery result from the additive effects of activities or developments that degrade the natural scene. The scenic values of the Riverway are affected primarily by proposals that originate outside the

boundary such as power line crossings, bridges, and cell towers in the viewshed. The impacts of the proposed trail connection would be minor and would not have a significant additive effect on scenic resources at the Riverway.

Impairment: The proposed trail connection would not result in impairment to scenic resources at the Riverway.

3.13 Soundscapes

Description: According to the NPS Management Policies (NPS, 2001) the NPS will preserve, to the greatest extent possible, the natural soundscapes of parks. Natural soundscapes exist in the absence of human-caused sound. The GMP for the Riverway echoes this policy with the following significance statement:

- *"Visitors have extended opportunities to experience the solitude and beauty inherent in the Riverway's exceptional natural resources."*

The project area is fairly remote and quiet. There is one home in the area. Skog Road, a lightly-traveled, gravel township road is about 0.4 mile from the proposed trail connection.

Impact Thresholds:

Negligible: Noise levels and the opportunity for solitude in the project area would remain essentially unchanged from the current situation.

Minor: There would be a small noticeable increase in noise levels in the project area. Noise would be periodic and short-term in nature. This would result in temporary decreases in opportunities for solitude.

Moderate: There would be a substantial increase in noise levels in the project area. Noise would be frequent and long-term. There would be a substantial decrease in opportunities for solitude.

Major: There would be a significant increase in noise levels in the project area. Noise would be constant and long-term. There would be a significant decrease in opportunities for solitude.

No action: No Hiking Trail Connection

The no action alternative would have no impact on the scenic resources of the Riverway.

Alternative 1: Proposed Hiking Trail Connection

The hiking trail would result in minor impacts to the natural soundscape. Noise occurring from construction activities would be short-term. Trail maintenance would result in periodic noise during maintenance activities. Use of the trail by hikers would result in minor noise impacts.

Cumulative Impacts: Cumulative impacts on natural soundscapes result from recreation use and activities outside the narrow boundary such as traffic and industrial activities. The impacts of the proposed trail connection would be minor and would not have a significant additive effect on natural soundscapes at the Riverway.

Impairment: The proposed trail connection would not result in impairment to natural soundscapes at the Riverway.

3.14 Recreation/Visitor Use

Description: The general management plan for the Riverway sets forth the basic management philosophy for the area. It states that one of the primary purposes of the Riverway is to provide for high quality recreational opportunities that do not detract from its exceptional natural, scenic, cultural, and aesthetic resources and values (NPS, 1998). Water-based recreation activities are the primary uses of the Riverway. Its scenic character and high water quality (suitable for body-contact recreation) make it popular for all types of boating recreation. Other types of activities include swimming, fishing, camping, and nature appreciation. Summer is the busiest season for both day-users and overnight visitors.

Boating use on the 102 mile segment of the St. Croix River from Gordon's Dam near Solon Springs, Wisconsin to Lions Club Park near St. Croix Falls, Wisconsin was studied in 2000. The purpose of the study is to obtain counts of watercraft and conduct river user interviews at major landings to obtain perceptions about crowding. The 102 miles was split up into 14 zones. Weekend watercraft densities during Summer 2000 were as follows:

Average for entire 102 miles = 11.2 per mile
Low = 1.0 per mile (Gordon Dam to CCC Bridge)
High = 74.91 per mile (Yellow River to Thayers)

The zone that includes Raspberry Landing and runs parallel to the proposed trail connection is Zone 11, which extends 10.5 miles from the Highway 70 Landing to County O Landing. Weekend densities in this zone were 3.05 watercraft/mile. Weekday densities were 2.19 watercraft/mile.

Based on the log book at the Benson Brook trailhead, most of the use on the trail occurs in the spring and fall during hunting seasons when there are approximately 100 users a month. The WiDNR would anticipate an increase of approximately 10-15% if the trail connection is constructed.

Impact Thresholds:

Negligible. There would be no impact to the visitor enjoyment of this section of the Riverway because the impacts to scenic resources and natural soundscapes would be unnoticeable. Scenery and soundscapes would remain essentially unchanged from the current situation. No impacts, positive or negative, would occur by providing a new recreation experience in the area.

Minor. Minor impacts to visitor enjoyment of this section of the Riverway would occur due to the minor impacts to scenic resources and/or minor impacts to natural soundscapes. Positive impacts would occur from providing a new recreational activity in the area. Negative impacts to existing recreational uses (canoeing, boating, fishing, wildlife observation) would be minor due to the unobtrusive nature of the new recreational activity.

Moderate. Visitor enjoyment of this section of the Riverway would be substantially impacted by moderate impacts to scenic resources and/or moderate impacts to natural soundscapes. A negative impact would result from providing a new recreational activity that substantially detracts from the primary recreational use of the Riverway.

Major. Visitor enjoyment of this section of the Riverway would be significantly impacted by major impacts to scenic resources and/or natural soundscapes. A significant negative impact would result from providing a new

recreational activity that is incompatible with the primary recreational use of the Riverway.

Consequences:

No action: No Hiking Trail Connection

The no action alternative would have no impact on recreational use at the Riverway.

Alternative 1: Proposed Hiking Trail Connection

The proposed trial connection would have a minor impact to recreation on the Riverway from the minor impacts to the scenery and natural soundscapes.

A minor positive impact would occur by providing a new recreational activity that is unobtrusive and does not conflict with the primary recreation use of the Riverway. User conflict would be minimal due to the due to the expected low use of trail and the fact that only hiking, snowshoeing and cross country skiing would be allowed. The trail would likely be used more in the spring and fall than during the summer boating season due to the prevalence of biting insects. In addition, the trail is back far enough from the rivers edge that users would not be seen from the river except for the occasional user who may want to wander to the rivers edge.

Cumulative Impacts: Cumulative impacts on recreation can result from the additive effects of activities that disrupt the recreational experience. These activities include construction and maintenance activities and other man-made intrusions to visitors seeking a natural experience, including perceptions of overcrowding and overuse. Given its expected low and seasonal use, the proposed trail would not have a significant additive impact to recreation/visitor use.

Impairment: According to NPS policy, impairment determinations relate only to resources and values and not to visitor use and enjoyment. Therefore, an impairment determination is not made for this recreation category. This EA does, however, discuss impairment in the closely related area of scenic resources and natural soundscapes above.

3.15 Wild and Scenic Rivers

The proposed crossing would affect the St Croix River, one of the eight original rivers included in the WSR, which was passed in 1968. The St. Croix River was designated a Wild and Scenic River from Gordon Dam to the dam at St. Croix Falls. The act pronounced:

"It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations."

The primary objective for the protection of Wild and Scenic Rivers (WSR) is to protect and enhance the values that caused it to be listed as a WSR "without limiting other uses that do not substantially interfere with public use and enjoyment of these values. The purposes of designating the St. Croix River was to protect its free-flowing character, its water quality and its outstandingly remarkable scenic, recreation, fish, wildlife, and cultural values.

Impact Thresholds: The impact thresholds for this category are based on the impact thresholds for the applicable resources above.

Negligible. There would be no impact on the free-flowing character of the St. Croix; neither surface water quality nor hydrology would be changed from current conditions; scenery in the project area would remain essentially unchanged relative to existing conditions; recreation and visitor use would not be impacted because impacts to scenic resources and natural soundscapes would remain essentially unchanged; no native terrestrial or aquatic wildlife would be disturbed and there would be no detectable change in the quality or quantity of terrestrial or aquatic habitat; impacts to cultural resources would be barely perceptible and not measurable.

Minor. There would be no impact on the free-flowing character of the St. Croix; changes in surface water quality or hydrology would be measurable but changes would be small, short-term and effects localized; scenery in the affected area and vicinity would show a minor deterioration relative to existing conditions; recreation and visitor enjoyment would experience minor impacts due to minor impacts to scenic resources and/or minor impacts to natural soundscapes; fish and wildlife would experience minor impacts from disturbance of less than 1 acre of native terrestrial and/or aquatic habitat; impacts to cultural resources would be measurable but minor and localized - for purposes of Section 106 the determination would be *no adverse effect*.

Moderate. There would be no impact on free-flowing character; changes in surface water quality and or hydrology would be long-term but localized to the project area; scenery in the project area would have a moderate deterioration relative to existing conditions; recreation and visitor use would be substantially impacted by moderate impacts to scenic resources and/or moderate impacts to natural soundscapes; fish and wildlife would experience moderate impacts by disturbance of 1-5 acres of terrestrial and/or aquatic habitat; impacts to cultural resources would be impacted by a change to one or more character defining without diminishing the integrity of the resource - for purposes of Section 106, the determination would be *adverse effect*.

Major. There would be no impact on free-flowing character; changes in surface water quality and/or hydrology would be measurable, long-term and not confined to the project area; scenery in the project area would show a major deterioration relative to existing conditions; recreation and visitor enjoyment would be significantly impacted by major impacts to scenic resources and/or natural soundscapes; fish and wildlife would be impacted by disturbing more than 5 acres or more of native terrestrial and/or aquatic habitat; impacts to cultural resources would be substantial, noticeable, and permanent - for purposes of Section 106, the determination would be one of *adverse effect*.

No action: No Hiking Trail Connection

The no action alternative would have no impact on recreational use at the Riverway.

Alternative 1: Proposed Hiking Trail Connection

The impacts of the proposed trial connection on the purposes for which the St. Croix River was established under the Wild and Scenic Rivers Act are described in the Table 2 below and in corresponding sections of the document; 3.4 Water Quality, 3.12 Scenic Resources, 3.14, Recreation, 3.6 Wildlife and 3.8 - 3.11 Cultural Resources.

Free-flowing character	Water Quality	Scenic Resources	Recreation	Fish	Wildlife	Cultural Resources
no impact	minor impact	minor impact	minor impact	minor impact	minor impact	negligible impact

Cumulative Impacts: Cumulative impacts on the values for which the St. Croix National Scenic Riverway was established occur from various sources as described in the preceding sections of this document. As also indicated in this document the proposed trail would not have a significant additive impact free-flowing character; water quality; or scenic, recreation, fish, wildlife, or cultural values.

Impairment: Alternative 1 would not result in impairment to the free-flowing character; water quality; or the scenic, recreation, fish, wildlife, or cultural values of the Riverway.

4 CONSULTATION AND COORDINATION

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